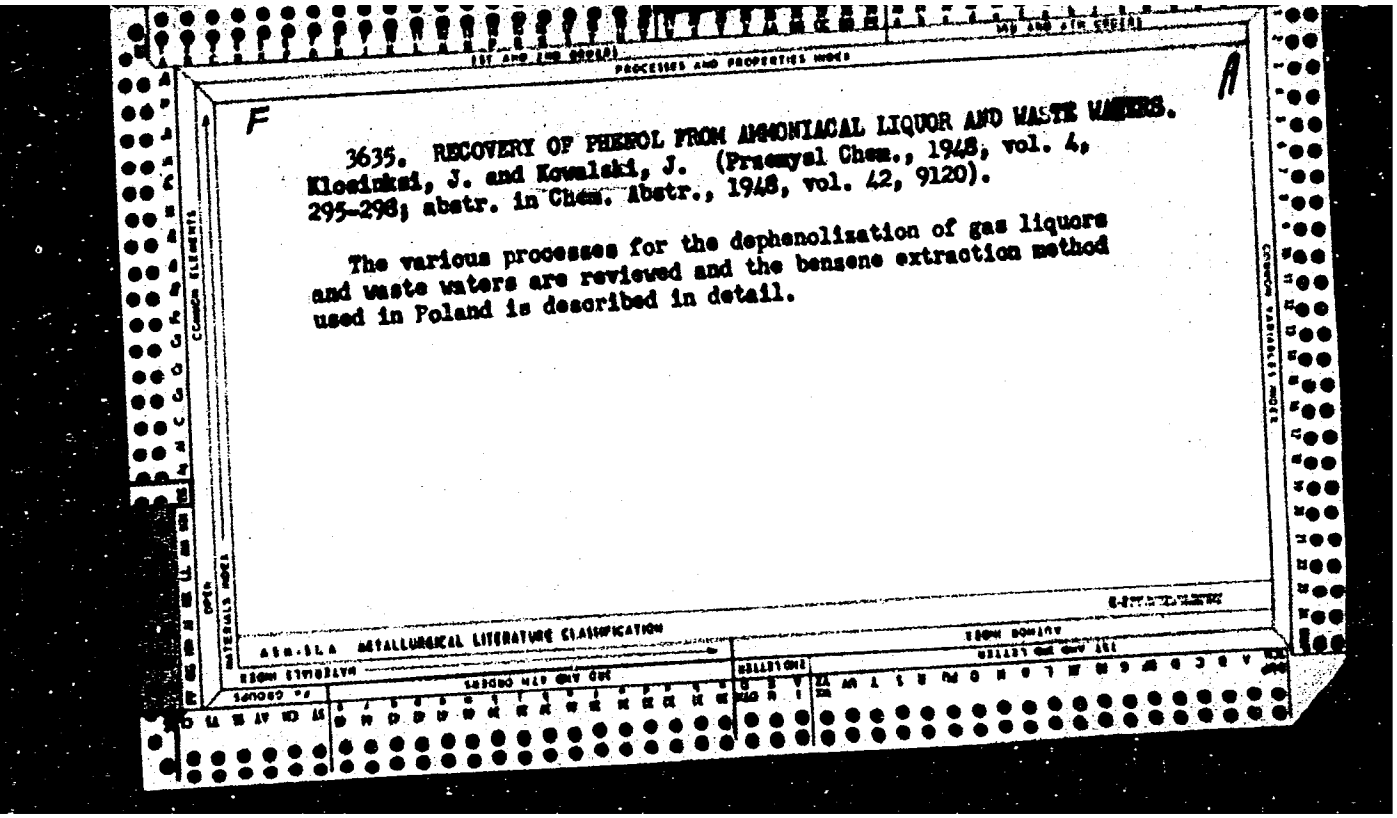
MANDROWSKA, Aniela; KONIECZNA, Wanda; KOWALSKI, Jerzy; SZCZYGIEL, Aleksander; KSIEZNY, Stefan; DIETL, Barbara.

Results of studies on the nutritional state and dietary patterns of children of one of the elementary schools in the Poznan Voivodeship. Roczn panstw zakl hig 14 no.2:133-144 '63

1. Department of Feeding Hygiene, State Institute of Hygiene, Warsaw, and Institute of Feeding Hygiene, School of Medicine, Warsaw.



F

3635. RECOVERY OF PHENOL FROM AMMONIACAL LIQUOR AND WASTE WATERS. Kloeinkni, J. and Kowalski, J. (Przemyal Chem., 1948, vol. 4, 295-298; abstr. in Chem. Abstr., 1948, vol. 42, 9120).

The various processes for the dephenolization of gas liquors and waste waters are reviewed and the benzene extraction method used in Poland is described in detail.

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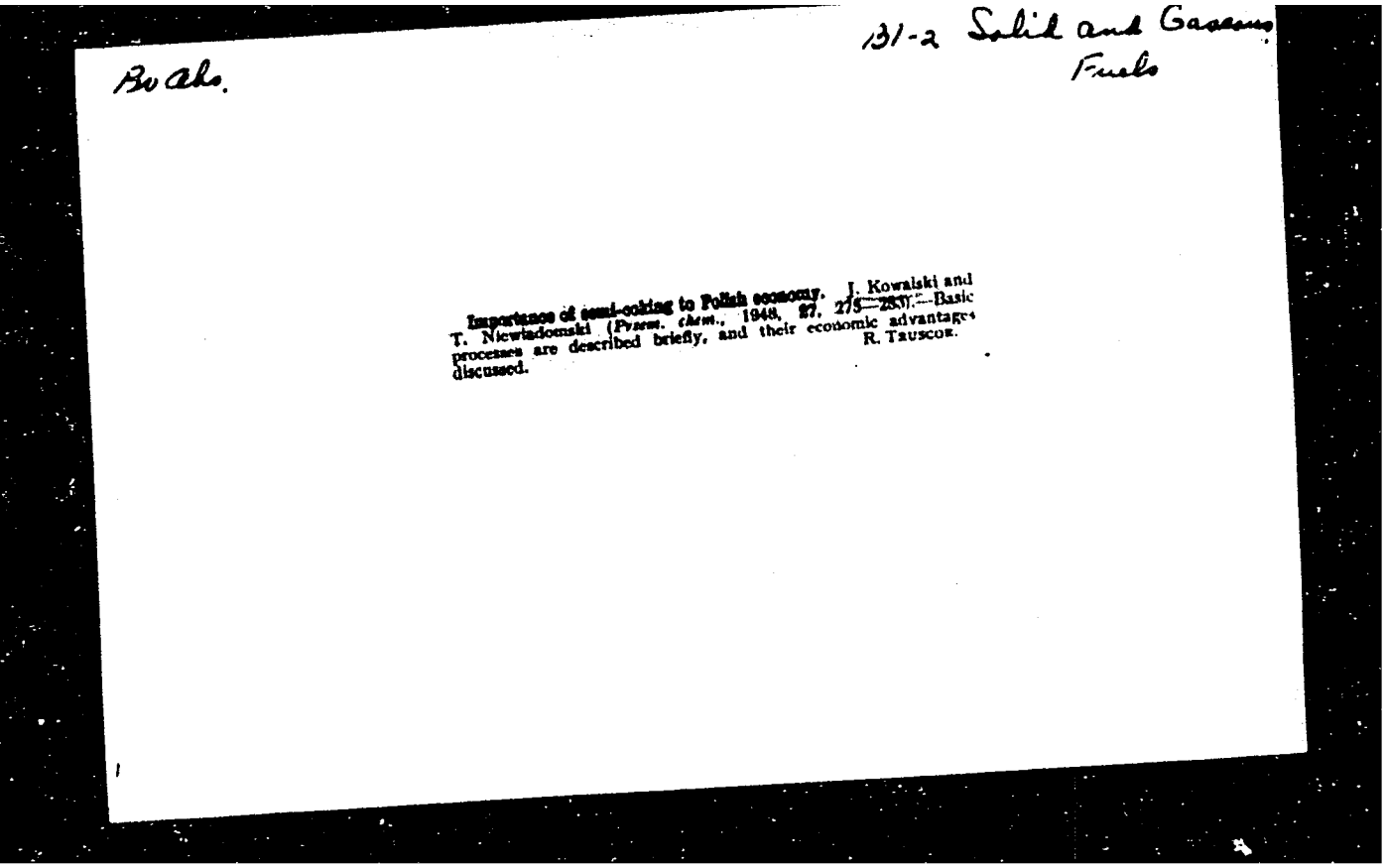


131-2 Solid and Gaseous Fuels

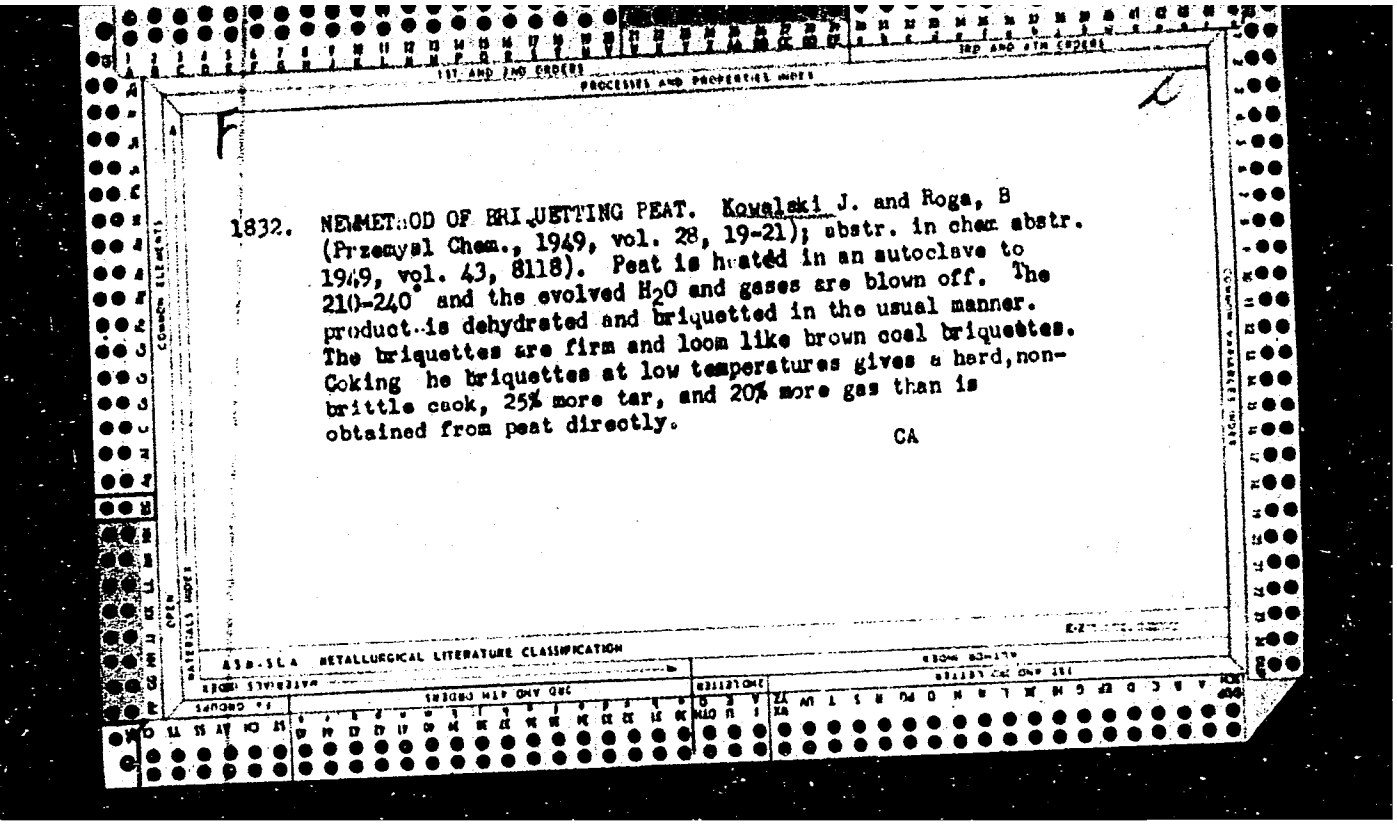
Bo abs.

Importance of semi-coking to Polish economy. J. Kowalski and T. Niewiadomski (*Przem. chem.*, 1948, **27**, 275—283).—Basic processes are described briefly, and their economic advantages discussed. R. Tauscon.

CA

21

The chemical processing of brown coal. Jerzy Kowalski and Stefan Rosiński. *Przegląd Górniczy* 5, 1317–21 (1949).—The relative merits of low-temp. carbonization, gasification, hydrogenation, and solvent extn. of brown coal mined in Poland are discussed. B. C. M.



1832. NEW METHOD OF BRIQUETTING PEAT. Kowalski J. and Roga, B (Przemysl Chem., 1949, vol. 28, 19-21); abstr. in chem abstr. 1949, vol. 43, 8118). Peat is heated in an autoclave to 210-240° and the evolved H_2O and gases are blown off. The product is dehydrated and briquetted in the usual manner. The briquettes are firm and loom like brown coal briquettes. Coking he briquettes at low temperatures gives a hard, non-brittle cook, 25% more tar, and 20% more gas than is obtained from peat directly.

CA

P.T.A.

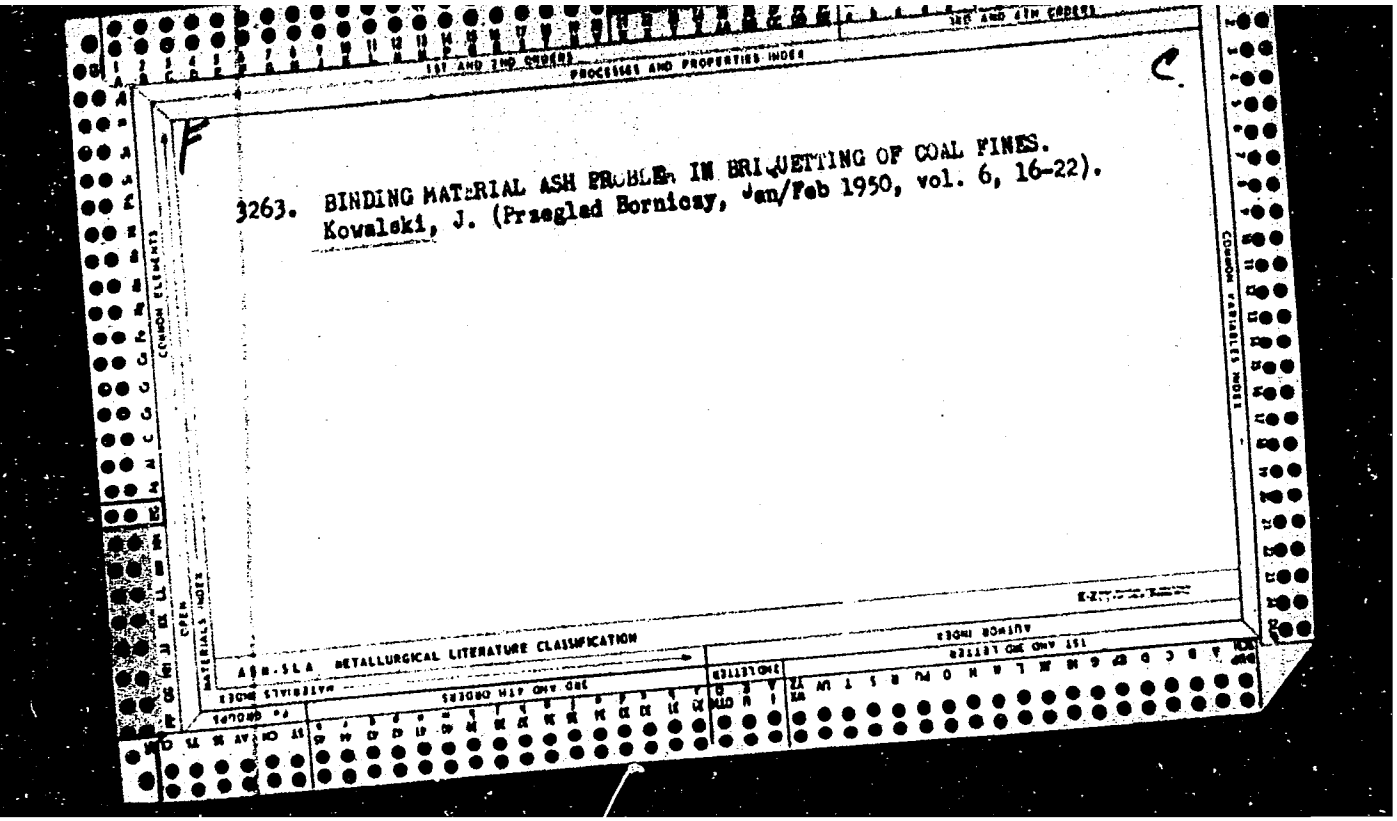
Chemistry & Chemical Technology

552 632.83 632.798

Kowalski J., Rogn H. Binding Material as a Problem of Briquetting the Coal Fines.

„Lepiszcze — problem brykietowania miału węglowego". Przegląd Górniczy. No. 1—2, 1950, pp. 16—22,3 tabs.

Pitch should be used as a raw material for production of liquid fuels (hydrogenation). Critical review of methods (and patents): briquetting with binders other than pitch or without binders, applying high pressure and increased temperatures, low-temperature carbonization etc. Future trends in fuel agglomeration.



3263. BINDING MATERIAL ASH PROBLEM IN BRIQUETTING OF COAL FINES.
Kowalski, J. (Przeglad Borniczy, Jan/Feb 1950, vol. 6, 16-22).

PTA

6

661.219 : 662.732

1181

Kowalski J., Lewandowski W. **Sulphur Recovery in Brown Coal Low-Temperature Carbonisation.**

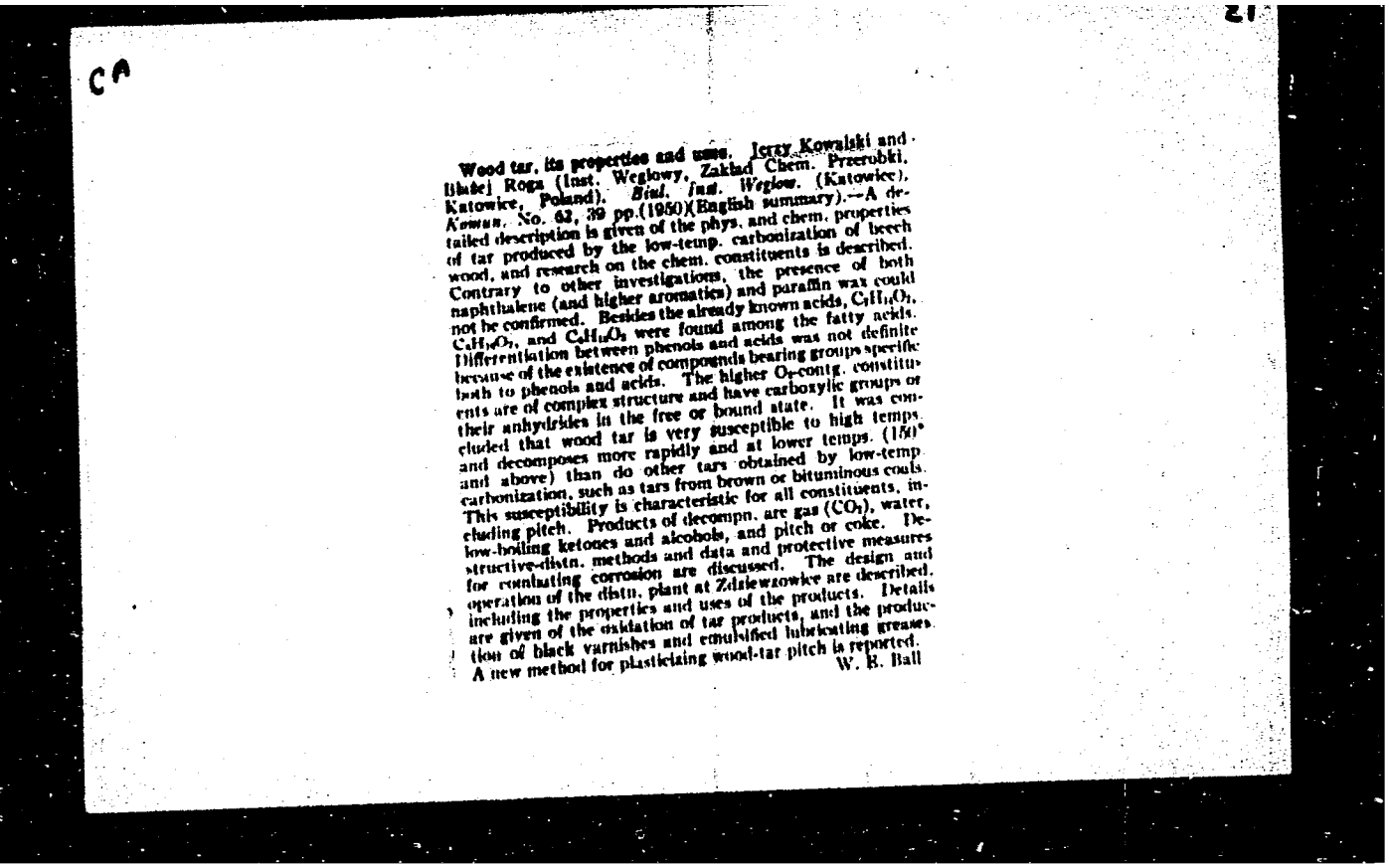
„Produkcja siarki przy półkoksowaniu węgla brunatnego". Przegląd Górniczy. No 6, 1951, pp. 237—242, 2 figs., 1 tab

Possibilities of recovery of sulphur as a by-product of coal carbonisation. Considering the high prime cost, sulphur recovery is practical only in low-temperature carbonisation of coal, especially of brown coal. Sulphur recovery in the brown-coal low-temperature carbonisation plant in B. (Germany), together with apparatus, are described, operating data and economic aspects being included. Technical factors and production efficiency. Possibilities of applying the method described in Poland.

C. A.
1951

Fuels and Carbonization Products
2P

Sulfur recovery in brown coal low-temperature carbonization. Jerzy Kowalski and Władysław Lewandowski. *Przegląd Górniczy* 7, 237-42(1951); cf. C.A. 44, 5078*f*. The German "Alkacid" method for S recovery in brown coal low-temp. carbonization is reviewed. This method is applicable to brown coals containing 0.5% 1% S. The process is divided into two phases: (1) absorption of H_2S in the Alkacid system and (2) combustion: $H_2S + O \rightarrow H_2O + S$ in Claus furnaces. For the absorption stage NH_4CH_3COOH or $CH_3CH_2NH_2COOH$ or mixture of both are used. By heating desorption occurs. Absorbing capacity of the mass is about 50 g. H_2S/l. of Alkacid mixt. The modified Claus furnace gives a 2-stage reaction: $H_2S + \frac{3}{2} O_2 = SO_2 + H_2O$; $2 H_2S + SO_2 = 3 S + H_2O$. Impurities in resulting S are less than 0.1%. The recovery flow sheet and production data are included. The tech. factors of production and process efficiency are discussed. A. J. P.

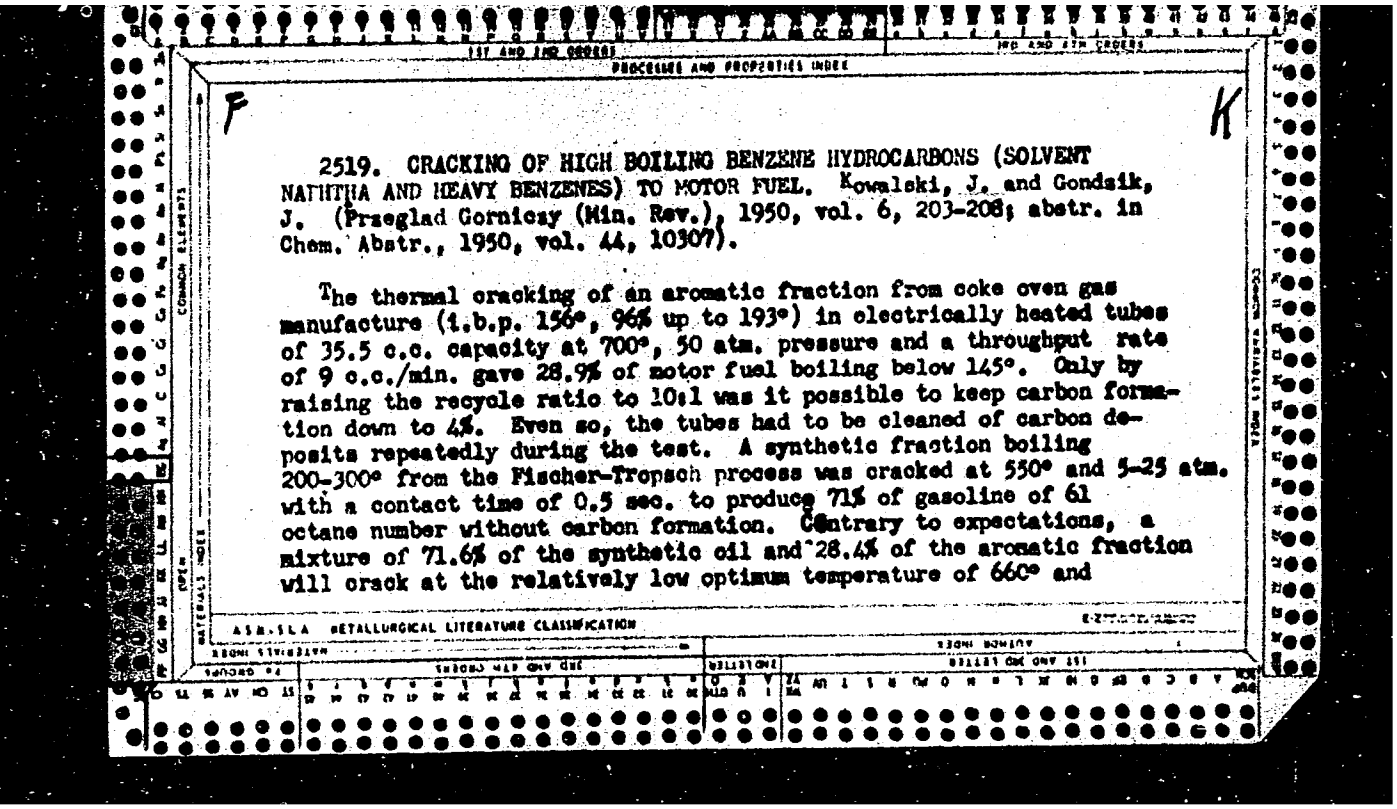


CA

21

Wood tar, its properties and uses. Jerzy Kowalski and Hubert Roga (Inst. Weglowy, Zaklad Chem. Przerobki, Katowice, Poland). *Biul. Inst. Weglow.* (Katowice), *Komun.* No. 62, 39 pp.(1950)(English summary).—A detailed description is given of the phys. and chem. properties of tar produced by the low-temp. carbonization of beech wood, and research on the chem. constituents is described. Contrary to other investigations, the presence of both naphthalene (and higher aromatics) and paraffin wax could not be confirmed. Besides the already known acids, $C_7H_{14}O_2$, $C_8H_{16}O_2$, and $C_9H_{18}O_2$ were found among the fatty acids. Differentiation between phenols and acids was not definite because of the existence of compounds bearing groups specific both to phenols and acids. The higher O_2-contg. constituents are of complex structure and have carboxylic groups or their anhydrides in the free or bound state. It was concluded that wood tar is very susceptible to high temps. and decomposes more rapidly and at lower temps. (150° and above) than do other tars obtained by low-temp. carbonization, such as tars from brown or bituminous coals. This susceptibility is characteristic for all constituents, including pitch. Products of decompn. are gas (CO_2), water, low-boiling ketones and alcohols, and pitch or coke. Destructive-distn. methods and data and protective measures for combating corrosion are discussed. The design and operation of the distn. plant at Zdziewzowice are described, including the properties and uses of the products. Details are given of the oxidation of tar products, and the production of black varnishes and emulsified lubricating greases. A new method for plasticizing wood-tar pitch is reported.

W. B. Ball



F

K

2519. CRACKING OF HIGH BOILING BENZENE HYDROCARBONS (SOLVENT NAPHTHA AND HEAVY BENZENES) TO MOTOR FUEL. Kowalski, J. and Gondsik, J. (Przeglad Gorniczy (Min. Rev.), 1950, vol. 6, 203-208; abstr. in Chem. Abstr., 1950, vol. 44, 10307).

The thermal cracking of an aromatic fraction from coke oven gas manufacture (i.b.p. 156°, 96% up to 193°) in electrically heated tubes of 35.5 c.c. capacity at 700°, 50 atm. pressure and a throughput rate of 9 c.c./min. gave 28.9% of motor fuel boiling below 145°. Only by raising the recycle ratio to 10:1 was it possible to keep carbon formation down to 4%. Even so, the tubes had to be cleaned of carbon deposits repeatedly during the test. A synthetic fraction boiling 200-300° from the Fischer-Tropsch process was cracked at 550° and 5-25 atm. with a contact time of 0.5 sec. to produce 71% of gasoline of 61 octane number without carbon formation. Contrary to expectations, a mixture of 71.6% of the synthetic oil and 28.4% of the aromatic fraction will crack at the relatively low optimum temperature of 660° and

at atm. pressure to yield 65% of gasoline of 78.7 octane number without any carbon formation. It is calculated that conversion of the aromatics in the mixture to gasoline was 80% greater than in cracking the aromatic fraction alone. The feasibility of the process on a large scale was confirmed by cracking to mixtures of the synthetic oil and the aromatic fraction in different proportions in a Carburol-type unit of 110 tons daily capacity, at a recycle ratio fo 5:1.

KOWALSKI, J.

Kowalski J., Dr.

Kowalski J., Dr. Eng. and Gondzik J., Eng. "Cracking of Higher Boiling Point Benzol Hydrocarbons (solvent naphta and heavy benzol) for Production of Motor Fuels." (Krakowanie wyzej wrzacych weglowodorow benzolowych (solwentnafty i benzolu ciezkiego) na paliwa pedne). Przeglad Gorniczy, No. 1, 1951, pp. 203-208, 2 figs., 4 tabs.

Results of laboratory experiments in cracking solvent naphta, pure heavy benzol and benzol mixed with synthetic heavy oil. Successful results of tests on an industrial scale. This method makes possible a profitable utilization of solvent naphta and heavy benzol as well as a considerable improvement in the octane number of benzene obtained by the cracking of products in the Fischer-Tropsch synthesis.

SO: Polish Technical Abstracts - No. 2, 1951

KOWALSKI, J.

Polish Technical Abst.
No. 1 1954
Chemistry and Chemical Technology

622.742 : 622.731

Kowalski J. Low-Temperature Catalytic Carbonisation of Peat.

"Wytlewanie katalityczne torfu". Przegląd Górniczy. No. 1, 1953. pp.27—29, 5 tabs.

Examination of the yield of primary tar from low-temperature carbonisation of isolated peat groups, bitumens, humic acids, cellulose, lignine and aqueous extract. The primary tar yield from bitumens amounts to from 72 to 78 per cent, and from cellulose, at correspondingly low temperatures of carbonisation, to from 15 to 20 per cent. An additive of NaOH increased the yield of primary tar from aromatic compounds. These results were corroborated by tests over lignite (containing 22% of cellulose) and over brown coal without cellulose content.

8-30-54

KOWALSKI, J.

Polish Technical Abst.
No. 1 1954
Chemistry and Chemical
Technology

(2)

2834

622.742 : 622.732

Kowalski J., Rychly J. Low-Temperature Carbonisation of Bitumens from Brown Coal.

„Wytlewanie bituminów z węgla brunatnego". Przegląd Górniczy No. 2, 1953, pp. 76—80, 5 figs., 3 tabs.

Investigation of the process of low-temperature carbonisation of crude montan wax and its waxy constituents, after fractionation according to Steinbrecher. Preliminary trials with low-temperature catalytic carbonisation proved that brown coal waxes reveal, in the presence of NaOH, a similar process of thermal decomposition as in the case of waxy bitumens of peat. A 20 per cent increase was obtained in the primary tar yield. The decomposition tends towards the formation of ketones. Low-temperature carbonisation in the presence of $ZnCl_2$ gave a 100 per cent increase in the yield of semi-coke, a 90 per cent increase in the yield of decomposition water, and a 10 per cent decrease in primary tar yield.

8-30-54

KOWALSKI, J.

Sulfonic acids from hydrocarbons of Fischer-Tropsch synthesis. J. Kowalski and H. Wenholer. *Przemysl Chem.*, 9, 12[illegible] (English summary).—Sulfonic acids of aliphatic and alicyclic hydrocarbons were obtained in presence of a halogen, especially Cl, as a catalyst. In an autoclave with stirrer were placed 300 g. paraffinic hydrocarbons from cobalt Fischer-Tropsch synthesis, 60 g. SO_2 (I), and 1.6 g. Cl (II). N was introduced to obtain 8 atm., followed by O to obtain 15 atm., and the mixt. was heated at 45°; the reaction was recognized by the drop of pressure. To keep 15 atm., more O was introduced. After 3 hrs., 76 g. of Na salt of sulfonic acids (III) was obtained. The use of 100 g. I under the same conditions yielded 112 g. III. The use of O dild. with neutral gases gives a more valuable end-product. The sulfonic acids were also obtained by the action of (1) I and O on hexane in ultraviolet light (III was purified with 6 parts of bleaching alkali at 40°); (2) I and air in the presence of II (III purified with $KMnO_4$); (3) I and II on butanol (purification with 10 parts Cl water at 35°); (4) I and air, activated with II, on the fraction b. 230-320° of the Fischer-Tropsch synthesis (III sepd. from hydrocarbons with 3 parts H_2O); and (5) I, air, and ultraviolet light on the fraction b. 230-320° (III sepd. from hydrocarbons with 8 parts MeOH). Gene A. Wozny

KOWALSKI, JERZY.

Wytwarzanie gazu do syntezy. (Wyd. 1.) Warszawa, Panstwowe Wydawn. Techniczne, 1954. 306 p. (Manufacture of gases for the synthetic industry. illus., bibl., diagrs., tables, index)

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956

KOWALSKI, J., Strzeszewska, M.

New method of extracting phenols from coke tars by selective solvents.
Biuletyn. p. 5.
KOKS, SMOLA, GAZ. Vol. 1, no. 2, Apr./June 1956, Katowice, Poland.

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957. Uncl.

KOWALSKI, J.

The important of brown coal as a source of fluid fuel.

P. 288 (Przeglad Geologiczny. Vol. 4, no. 7, July 1956, Warszaw, Poland)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7,no. 2,
February 1958

KOWALSKI J.

POLAND / Chemical Technology, Chemical Products and their Applications. Treatment of Solid Fuels H-22

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 37452

Author : Kovalski J.

Inst : Not given

Title : Asphalts Derived from Earthon Brown Coal and Their Thermal Decomposition upon Preparation of Low Temperature Tars. Part I. Properties of Crude Asphalts and of their Waxy Components

Orig Pub : Przem. Chem., 1956, 12, #10, 576-578

Abstract : Listed are laboratory determined physical and chemical properties of crude asphalts extracted with benzol from "Luzhyc" coals, and those of benzol and acetone

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POLAND / Chemical Technology, Chemical Products and their Applications. Treatment of Solid Fuels H-22

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 37452

Abstract : waxes extracted from asphalts by Schtoinbrecher's method. A method for separation of montanic acid or of the fatty acid mixtures from benzol wax has been worked out. A conclusion is made about the possibility of fatty acid ketones formation upon the extraction of asphalt and especially upon distillation of the extract.

Card 2/2

POLAND/Chemical Technology - Chemical Products and Their Application. Refining Solid Fuel Minerals. H-22

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 58605

Author : Kowalski, J.
Inst :
Title : Bitumens of Brown Coal and Their Thermal Decomposition During Semi-Coking. II. Thermal Decomposition of Bitumens and Waxes.

Orig Pub : Prsem. chem., 1956, 12, No 12, 693-696

Abstract : Experiments were conducted on the semi-coking in a Fisher-Shrader [sic] retort of bitumens obtained by extraction on a semi-plant scale of brown coals with benzene, as well as waxes separated by benzene and acetone from raw waxes by the Shteynbrekher [sic] method, and of cerotates. Data was obtained on the yields and compositions of the products of semi-coking; conclusions were made concerning the chemical nature of the initial

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POLAND/Chemical Technology - Chemical Products and Their H-22

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 58605

products and the run-throughs during the thermal action changes.
Report I, see RZhKhim, 1958, 37542.

Card 2/2

KOWALSKI, JERZY

POLAND/Processing of Solid Minerals. H.

Abs Jour : Ref Zhur - Khimiya, No 19, 1958, 65562

Author : Kowalski Jerzy
Inst :
Title : The Method of Determination of Montan Wax and Its Separation From Lignite Bitumens.

Orig Pub : Zesz. nauk. Politechn. wrocl., 1956, No 14, 57-67.

Abstract : Raw monton wax (MW) and resins obtained by means of extraction from lignite contain in addition to mechanical admixtures, a variable quantity possessing no wax or resinous structural substances. During extraction with a mixture of benzene and alcohol in a ratio of 50:50 to 80:20, their output fluctuates within 5-30%. Basically thsi is dehydrohumic acid and asphalt oxy acid. For the separation of the substances enumerated above, a simple method has been worked out, based on the settling out of admixtures by kogasin and subsequent

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15

POLAND/Processing of Solid Minerals. H-

Abs Jour : Ref Zhur - Khimiya, No 19, 1958, 65562

distillation. The separation of admixtures allows an increase in output of MW with the use of a smaller quantity of settler, and affords a possibility of refining MW with the use of adsorbents.

Card 2/2

KOWALSKI, Jerzy

Prof. Dr. Inz. Jerzy Kowalski: Oczyszczanie Gazu do Syntezy, Warsaw: Panstwowe Wydawnictwa Techniczne, 1955, 174 p. Reviewed in Roczniki Chemii, Vol 30, No 3m, 1956.

KOWALSKI, J.

Distr: 4E2c(j)/4E3d

5544 661.993:66.091/.097

* Kowalski J. Hydrogenation of Carbon Oxide. Synthesis of Hydrocarbons and Alcohols.

„Uwodornianie tlenku węgla. Synteza węglowodorów i alkoholi". Warszawa, 1957, PWT, 16°, 445 pp., 128 figs., 93 tabs.

A discussion of syntheses of gaseous, liquid, and solid hydrocarbons and of alcohol from carbon oxide and hydrogen. The authors give physico-chemical principles of normal-, medium-, and high-pressure syntheses, technology of the processes, material and power balances, and processing of primary products of the synthesis to valuable industrial raw materials such as fuels, lubricants, fats, etc. Descriptions are included of methods used in the production and regeneration of a variety of catalysts used in the syntheses.

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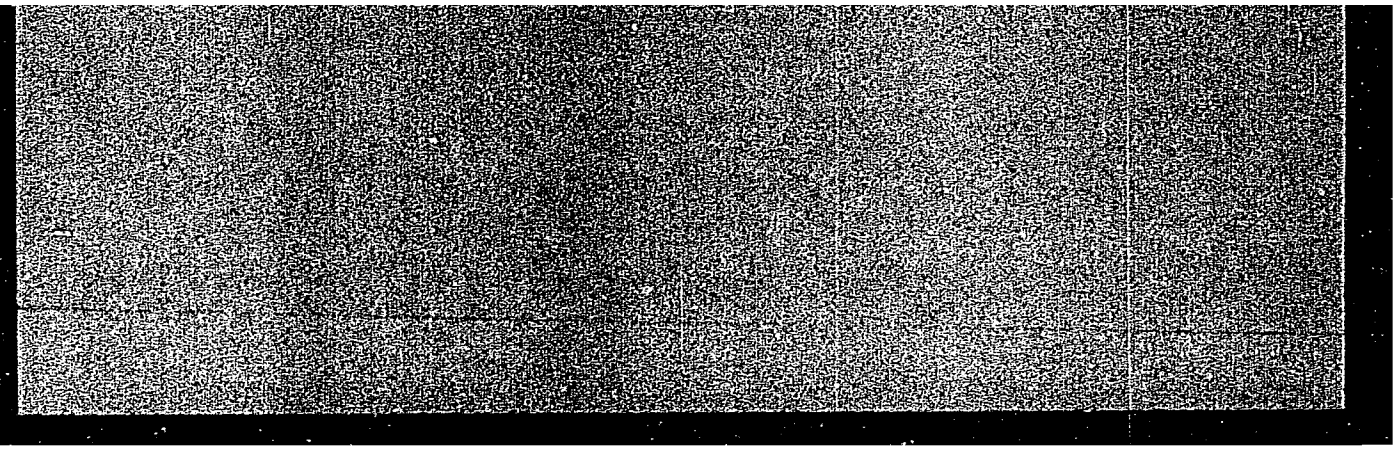

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000825710

POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78978.

Author : Kowalski, J.
Inst : Not given.
Title : The Effect of Extraction Conditions of a Brown Coal Upon the Yield and Bitumen Composition.

Orig Pub: Chem stosow., 1957, 1, No 2, 141-152.

Abstract: Laboratory experiments concerning the extraction of native brown coal with benzene, ethanol and their mixture (1:1) were carried out. The experiments were conducted on coal after it has been reduced to ashes with 5% HCl or concentrated HCl at room temperature, or boiling temperature, as well as on coal which has not been subjected to such a treatment. It was demonstrated that samples reduced to ashes produced 240% more of

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POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78977.

Abstract: given as well as the conclusions concerning the changes which resulted from the semi-carbonization of yields, concerning the composition of humic and dehydrohumic acids, humous and insoluble humic acids as well as bitumen and alcohol-benzene coal extracts. Seven references are cited.

Card 2/2

POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78977.

Author : Kowalski, J.
Inst : Not given.
Title : The Thermal Decomposition of Brown Coal.

Orig Pub: Chem. stosow., 1957, 1, No 2, 153-167.

Abstract: Laboratory experiments were carried out (in Fisher's retort with Heinz' mounting) in regard to the thermal decomposition of native brown coal. Prior to the decomposition the coal was: a) reduced to ashes (upon treatment with 5% HCl), b) freed from bitumen, c) freed from bitumen and humic acids soluble in a 1% ammonia solution, whereupon observations were conducted concerning the change in humic acids solubility. Results of the experiments are

Card 1/2

POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78977.

Abstract: given as well as the conclusions concerning the changes which resulted from the semi-carbonization of yields, concerning the composition of humic and dehydrohumic acids, humous and insoluble humic acids as well as bitumen and alcohol-benzene coal extracts. Seven references are cited.

Card 2/2

KOWALSKI, JERZY

POLAND/Chemical Technology. Chemical Products and Their Application. Treatment of Solid Mineral Fuels. H-22

Abs Jour: Referat Zhur-Khimiya, No 5, 1958, 15709.

Author : Kowalski Jerzy, Rosinski Stefan
Inst :
Title : The Problem of Utilization of the Cellulose of Brown Coal.

Orig Pub: Koks, smola, gaz, 1957, 2, No 2, 58-62.

Abstract: It is pointed out that the single Turow mine of the Polish brown coal deposit can produce as much as 500,000 - 600,000 tons of lignite annually, and since this lignite contains 10-20% cellulose, it follows that it is advantageous to utilize lignite as a raw material for the production of cellulose.

Card : 1/1

KOWALSKI, J.

H

POLAND/Chemical Technology. Chemical Products and Their Application. Treatment of Solid Mineral Fuels.

Abs Jour: Ref Zhur-Khim., No 13, 1958, 44543.

Author : Kowalski Jerzy, Kostecka Lidia.
Inst :
Title : Study of the Process of Purification of Mineral Tar With Solvents.

Orig Pub: Koks, smola, gaz, 1957, 2, No 5, 191-195.

Abstract: Laboratory experiments on purification of mineral tar (obtained from brown coal) by extraction of contaminating admixtures from the fused and from dissolved tar. On mixing the fused tar with paraffin hydrocarbons there were obtained, successively, black, brown, and white products; on mixing the same hydrocarbons with a benzene solution of the

Card : 1/2

POLAND/Chemical Technology. Chemical Products and Their Application. Treatment of Solid Mineral Fuels. H

Abs Jour: Ref Zhur-Khim., No 13, 1958, 44543.

tar only two products were obtained (a brown and a white) with lower yields. A benzene-paraffin solution of the tar was extracted with organic, O_2-containing, compounds (acetone, furfurole, methanol). Results are described of an effective purification with methanol which yielded a yellow-colored product. It was found that some fractions of the tar exhibit drying properties.

Card : 2/2

POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78979.

Author : Kowalski, J.
Inst : Not given.
Title : The Bitumens of Brown Coal, Their Thermal Decomposition by Semi-Carbonization. Part III. Tars, Separated From Bitumens and Their Decomposition by Semi-Carbonization.

Orig Pub: Przem. chem., 1957, 13, No 1, 40-44.

Abstract: From the study of tars separated from crude bitumens (for part II, see R. Zh. Khim., 1958, 58605), according to the method of Steinbrecher, it was shown that their molecule contains one O atom more as compared to similar tars from the coal of German Middle basin and to colophony; besides, they differ by a greater content of

Card 1/2

POLAND / Chemical Technology. Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78979.

Abstract: neutral substances (65-75%). In the experiments concerning the semi-carbonization of these tars with catalysts (activated carbon, SiO_2 and Al_2O_3 gels) it was found that catalysts contribute to a decrease in the decomposition temperature and to the liberation of oxygen in the form of pyrogenic water.

Card 2/2

KOWALSKI, J.

COUNTRY : POLAND
CATEGORY : Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Solid Fossil*
ABS. JOUR. : RZhKhim., No 19, 1959, No. 69072

AUTHOR : Kowlski, J.; Klose, J.
INSTITUTE : -
TITLE : Study of the Extraction of the Phenol-Containing Spent Caustic
ORIG. PUB. : Koks, smole, gaz, 1958. 184-189

ABSTRACT : In the determination of phenols in the acetone extracts of tars and oils with NaOH solutions, anomalous changes of volume and formation of an additional layer is noted at times. By studies it was established that the indicated phenomena occur at concentrations of NaOH $> 20\%$. Solutions of NaOH having concentrations $< 20\%$ are miscible with acetone (A) in all proportions. Free spent caustic solutions A will extract certain quantity of phenol in the form of phenolate as well as

*Fuels.

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ABS. JOUR. : RZhKhim., No 19, 1959, No. 69072

AUTHOR :
INST. TITLE :
TITLE :

ORIG. PUB. :

ABSTRACT : some NaOH. Additions of phenols, hydrocarbons
Cont'd to A permits conducting extraction from phenol-
-containing spent caustic solutions without
dissolving and extracting NaOH at the same time.
Use of methyl and ethyl alcohols in place of A
is not recommended. -- Ya. Selanovskiy.

Card: 2/2

U 75

Country : Poland
Category :

H-22

Abs. Jour. :

39989

Author : Kowalski, J. and Jastrzebski, J.
Institut. : Not given
Title : Investigation of the Effect of Free Sulfur on Brown Coal Bitumen

Orig Pub. : Chem Stosow, 2, No 1, 117-129 (1958)

Abstract : The authors have investigated the effect of the addition of S on the thermal decomposition of brown coal bitumen and on the waxes and resins obtained therefrom. The addition of 2 and 10% S to the bitumen during semicoking resulted in the following distribution (in %): S content of the gas 21.7 and 44.1, respectively; in the liquid products, 65.1 and 51.6; in the semicoke, 13.2 and 4.3.

Ya. Satunovskiy

Card: 1/1

COUNTRY : Poland H-22
CATEGORY :

ABS. JOUR. : RZKhim., No. 21 1959, No. 76044

AUTHOR : Kowalski, J. and Szczurek, B.
INST. : Not given
TITLE : Experiments on the Extraction of Phenol from Coal Tar Resins with Acetone

ORIG. PUB. : Koks, Smola, Gaz, 3, No 4, 143-151 (1958)

ABSTRACT : The authors have investigated conditions for the dephenolation of the oil produced from bituminous coal tar and of the absorbent oil [sic] produced from primary brown coal tar by extraction with acetone. Kogasin, obtained from the Fischer-Tropsch synthesis, was used as an auxiliary extracting agent. The effect of the ratio of the above-indicated solvents was studied, and it was found that the use of 20% Kogasin is sufficient for the successful extraction of phenol from the above-indicated oils at acetone concentrations of 20-90% by volume.

Ya. Salunovskiy

CARD: 1/1

KOWALSKI, J.

POLAND/Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Solid Fossil Fuels. II

Abs Jour: Ref Zhur-Khim., No 8, 1959, 28840.

Author : Kowalski, J. and Szczurek, J.
Inst :
Title : Experiments on the Extraction of Phenols from Coal Tar with Organic Solvents.

Orig Pub: Koks, mola, Gaz, 13, No 1, 11-19 (1958) (in Polish with summaries in German, English, and Russian).

Abstract: The phenols were extracted from the coal tar acid fraction with ethyl alcohol (I) with the addition of kogasin (obtained by the Fischer-Tropsch synthesis at low pressures, using a Co-catalyst). The ex-

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POLAND/Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Solid Fossil Fuels. II

Abs Jour: Ref Zhur-Khim., No 8, 1959, 28840.

traction efficiency (E) was determined as a function of the concentration of I and of kogasin. In a number of cases the extraction, in addition to the usual two layers (purified product and extract), gave a third aqueous layer. A number of methods for the purification of the phenolic extracts from oils have been investigated. A product of satisfactory purity can be obtained by freezing out the extract and by adding H_3PO_4. -- Ya. Satunovskiy.

Card : 2/2

KOWALSKI, Jerzy, dr inz.

About the paper on the determination of the filtration coefficient by measuring the influent water in a small diameter borehole. Gosp wodna 24 no. 5:178 My '64.

1. Department of Soil Science and Earth Structures, College of Agriculture, Wroclaw.

KOWALSKI, Jozef

The formal criteria of planning the development of technology.
Przegl techn no.49:3 7 D '60.

KOWALSKI, Jozef

Surgical treatment of defects of the long bones. Postepy chir. 2:193-196 1955.

1. Z Oddzialu Ortopedycznego Szpitala Miejskiego im. Babinskiego we Wroclawiu Kier. dr. med. J. Kowalski.
(BONES, abnormalities,
hypoplasia of long bones, surg. (Pol))

KOWALSKI, Jozef; BIENIEK, Jan

Fractures of the femoral neck. Chir.narz.ruchu ortop.polska 25 no.1:15-18 '60
(FEMUR NECK fract. & dislocs.)

KOWALSKI, Jozef

Delayed union and pseudarthrosis of the long bone. Chir.narz. ruchu ortop. polska 26 no.5:531-540 '61.

1. Z Kliniki Ortopedycznej AM we Wroclawiu i Oddzialu Ortopedycznego Szpitala Wojewodzkiego we Wroclawiu Kierownik: dr J.Kowalski.
(PSEUDOARTHROSIS) (FRACTURES UNUNITED)

KOWALSKI, Jozef

Evaluation of the arterial system in delayed union and pseudoarthrosis of the long bone. Chir.narz. ruchu ortop. polska 26 no.5:559-574 '61.

1. Z Kliniki Ortopedycznej AM we Wrocławiu i z Oddzialu Ortopedycznego Szpitala Wojewodzkiego we Wroclawiu Kierownik: dr J.Kowalski.
(FRACTURES UNUNITED radiog) (PSEUDARTHROSIS radiog)
(ANGIOGRAPHY)

KOWALSKI, Jozef; JASTRZEBSKI, Jan

Rupture of the biceps brachii. Chir. narzad. ruchu ortop. pol. 28 no.2:177-184 '63.

1. Z Kliniki Ortopedycznej AM we Wroclawiu Kierownik: doc. dr J. Kowalski.
(ARM INJURIES) (MUSCULAR DISEASES)

KOWALSKI, J.; JASTRZEBSKI, J.; KOWALSKI, W.

Treatment of old injuries of the proximal epiphyses of the forearm. Acta chir. orthop. traum. cech. 30 no.4:292-301 Ag '63.

1. Ortopedicka klinika lekarske akademie ve Vratislavi, prednosta doc. dr. J. Kowalski.
(ELBOW) (FOREARM INJURIES)
(FRACTURE FIXATION) (RADIUS FRACTURES)
(ULNA)

KOWALSKI, Jozef

Studies on the biology of the fungi Venturia populina (Vuill.) Fabr. and Venturia tremulae Aderh. Acta agrobot 14 no.1:71-100 '63.

1. Institute of Phytopathology, Central College of Agriculture, Warsaw. Head: prof. dr J. Kochman.

BARTOSIK, A.; GOLKA-OPALINSKA, B.; KOWALSKI, K.; ZARZYCKA, H.

Application of thermal therapy in Heine-Medin disease. Pediat pol 29 no.1:61-70 Ja '54. (EEAL 3:8)

1. Z II Kliniki Chorob Dzieciecych Akademii Medycznej w Lodzi, Kierownik: prof. dr med. Fr.Redlich. (Otrzymano: 19.IX.1953)

(POLIOMYELITIS, therapy,
*thermal ther.)
(BALNEOLOGY, in various diseases,
*polio., thermal ther.)

KOWALSKI, K.

M.A. YOUTZ
2 copies

Phenol-formaldehyde glues for cold glueing. K. Kowalski (Inst. Tworzyw Sztucznych, Warsaw). Przemysl Chem. 34, 517-18(1955)(English summary).—Properties are described of a phenol-HCHO resin prepd. in strong basic medium, the ratio of phenol/HCHO being 1-1.2. The viscosity of the resin was 4000-6000 centipoises, the phenol content below 10%, and the water content below 20%. Glues prepd. from the resin were hardened by using alc. solns. of benzenesulfonic or toluenesulfonic acids as catalysts (13-18 g. of acid/100 g. of resin). The hardening time was 8-14 hrs. The shearing strength of the dry samples was 80, and after treating 6 hrs. with boiling water, 65 kg./sq. cm. A. Kreglewski

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First Polish seminar on speleology. Wszechswiat no. 2:51 F '64.

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KOWALSKI, K. SP6CT in the Field Day Competition of 1956. p. 29.
wn. The CQ DX Contest of 1956. p. 30.
Characteristics of tubes. (To be contd.) p. 30.

Vol. 6, No. 10, Oct. 1956.
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Warszawa, Poland.

So: East European Accession, Vol. 6, No. 2, Feb. 1957

KOWALSKI, K.

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KOWALSKI, K.

The famous paleolithic paintings in Lacaux are in danger.
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KOWALSKI, K.; WOJTUSIAK, R.J.

Book reviews. Wszechswiat no.5:136-137 My '65.

Kowalski, Kazimierz.

Jaskinie Polski (Caverns of Poland) Warszawa, Panstwowe Muzeum Archeologiczne, 1951
466 p. illus., maps, diagrs.
Bibliographical material throughout.
Text in Polish, Russian and French.

KOWALSKI, K.

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SO: Monthly List of East European Accessions, Vol. 2, #8, Library of Congress, August, 1953, Uncl.

KOWALSKI, KAZIMIERZ.

Dolina Pradnika. Pod red. Bohdana Malachowskiego. Warszawa, Sport i Turystyka, 1954. 71 p.
(The Pradnik Valley. illus., map, bibl.).

SO:Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957, Uncl.

KOMAISKI, Kazimierz (Krakow)

Polish-Mongolian paleontologic expedition to the Gobi Desert in 1964.
Wszechswiat no.1:1-6 '65.

KOWALSKI, K.

2470. Daily rhythm of activity in the mouse-eared bat *Myotis myotis* Borkhausen. K. Kowalski *Folia Biol., Warsaw*, 1955, 3, 53–64.—The daily rhythm of *M. myotis* was investigated in movable cages. The movements were registered with a kymograph or electric counters. With light at night and darkness during the day, feeding at the beginning of the dark period, a total reversal of the daily rhythm of activity takes place, and it then occurs during the astronomic day. In constant darkness the 24-hr. daily rhythm of activity is preserved regardless of the time of feeding. By discontinuing the feeding regardless of the light conditions, the activity immediately decreases very rapidly.

B. VINAY.

KOWALSKI, K. : SZYMCZAKOWSKI, W.

Research on fauna in the Tatra Mountains.

P. 1953 (Wierchy) Vol. 25, 1956, Krakow, Poland.

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. VOL. 7, NO. 1, JAN. 1958

KOWALSKI, K.

Problems of the paleontology of Quaternary mammals. p. 5

KOSMOS. SERIA A: BIOLOGIA (Polskie Towarzstwo Prazrodnikow im. Kopernika) Warszawa. Vol. 8, no. 1. 1959

Poland

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959.

Uncl.

KOWALSKI, K.

Plenary session of the Zoological Committee, Polish Academy of Sciences, on April 12, 1961. Kosmos biol 10 no.5:515-516 '61.

(Poland—Zoology)

KOWALSKI, Kazimierz

Symposium on the paleontology of vertebrates in Paris, May 29-June 3, 1961. Kosmos biol 10 no.6:643-650 '61.

(Vertebrates)

KOWALSKI, K.

A plenary session of the Zoological Committee of the Polish Academy of Sciences held October 19, 1961. Kosmos Biologia 11 no.2:224 '62.

KOWALSKI, K.

Plenary session of the Committee of Zoology of the Polish Academy of Sciences, March 24, 1962. Kosmos biol 11 no.4:476-477 '62.

KOWALSKI, Kazimierz

Scientific activities of the Institute of Systematic Zoology of the Polish Academy of Sciences in Krakow. Kosmos biol 12 no.5: 474-481 '63.

KOWALSKI, Kazimierz

Plenary session of the Zoological Committee of the Polish Academy of Sciences held in Krakow May 3, 1963. Kosmos biol 12 no.5:490-491 '63.

KOWALSKI, Kazimierz (Krakow)

Institute of Systematic Zoology, Polish Academy of Sciences.
Nauka polska 12 no. 3:83-90 My-Je '64.

1. Head, Institute of Systematic Zoology, Polish Academy of Sciences, Krakow.

KOWALSKI, Kazimierz

Plenary Session of the Committee of Zoology of the Polish Academy of Sciences of October 17, 1963 discussing the state and prospects of Polish zoology. Kosmos biol 13 no.3:258-264 '64.

KOWALSKI, Kazimierz

Paleoecology of mammals of the Pliocene and the Early Pleistocene of Poland. Acta theriolog 8 no.1/16:73-88 '64.

1. Institute of Systematic Zoology, Krakow, of the Polish Academy of Sciences.

KOWALSKI, Kazimierz, prof.

The Institute of Systematic Zoology. Review Pol Academy 9 no.3:15-19 Jl-S '64.

1. Head, Institute of Systematic Zoology of the Polish Academy of Sciences, Krakow.

KOWALSKI, K.; SKALSKI, Andrzej; MASLANKIEWICZ, K.

Book reviews. Wszechswiat no.2:53-54 F '65.

STOKLOSA, Jan, mgr inż.; KOWALSKI, L., inż.

Displacement method of rebuilding a blast furnace. Wiad hut 21 no.2:38-48 F '65.

KOWALSKI, L.

Trace detectors, a new method of visualizing nuclear particles.
Postepy fizyki 15 no.4:437-448 '64.

1. Department of Atomic Nuclear Physics, University, Warsaw.

P/047/62/013/004/003/003
D207/D308

AUTHORS: Kowalski, Ludwik and Radvanyi, Pierre

TITLE: Semiconducting p-n junctions as detectors of nuclear radiations

PERIODICAL: Postępy fizyki, v. 13, no. 4, 1962, 463-492

TEXT: The article reviews Western and Soviet-bloc literature for the period 1949-1961. The authors discuss fundamentals of the detection mechanism, properties of detectors (2 tables list parameters of U.S.A. commercial devices), and application of these detectors. There are 118 references, 24 figures and 2 tables.

ASSOCIATION: Katedra Radiologii Politechniki Warszawskiej (Chair of Radiology, Warsaw Polytechnic) (Ludwik Kowalski); Laboratorium Fizyki Jądrowej, Orsay (Nuclear Physics Laboratory, Orsay) (Pierre Radvanyi)

Card 1/1

KOWALSKI, Ludwik

Most recent achievements in semiconductor nuclear radiation detectors. Postepy fizyki 15 no.5:547-558 '64.

1. Department of Radiology, Technical University, Warsaw.

L 02263-67 TG
ACC NR: AP6006506 SOURCE CODE: PO/0034/65/000/010/0409/0411

AUTHOR: Raczkowski, W. (Master engineer); Kowalski, L. (Engineer) 37 B

ORG: [Raczkowski] Industrial Institute for Automation and Measurement (Przemysłowy Instytut Automatyki i Pomiarów); [Kowalski] "Mera" Society for Industrial Automation and Measuring Instruments (Zjednoczenie Przemysłu Automatyki i Aparatury Pomiarowej "MERA")

TITLE: Reliability and service life of products of the automation equipment industry [Paper presented at the Fifth Congress of Polish Technicians]

SOURCE: Pomiary, automatyka, kontrola, no. 10, 1965, 409-411

TOPIC TAGS: industrial automation, automation equipment, reliability engineering

ABSTRACT: This summary of a report read at the Fifth Congress of Polish Technicians discusses steps planned by the newly created Industrial Institute for Automation and Measurement, in cooperation with the MERA society, to improve the reliability and service life of automation equipment products as part of the goals of the 1966-1970 five-year plan. These steps include the control and evaluation of reliability and service life, as well as the planned formulation of appropriate standards. The two basic concepts are subdivided into a number of individual elements, from establishing product prototypes for reliability evaluations to the training of

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UDC: 62.004.12

L 02263-67
ACC NR: AP6006506

inspection personnel. Other topics include specific organizational steps in establishing an industry-wide reliability service of the MERA and its program of activities.

SUB CODE: 13,14/ SUBM DATE: none

Card 2/2 pb

KOWALSKI, M.; STANIEWSKI, R.

Preliminary studies on the sensitivity of various strains of Rhizobium to phages. Acta mikrob.polon. 8 no.3-4:253-258 '59.

1. Z Zakladu Mikrobiologii Ogolnej Universytetu Marii Curie-Sklodowskiej w Lublinie.
(RHIZOBIUM)
(BACTERIOPHAGE)

L 39659-66 EWT(1)/EWG(f) IJP(c) AT/GD-2

ACC NR: AP6001433 SOURCE CODE: PO/0053/65/000/009/0417/0430

AUTHOR: Kowalski, M.

ORG: Katedra Przyrzadow Elektronowych, Politechnika Warszawska (Department of Electronic Devices, Warsaw Polytechnic Institute)

TITLE: The generation and amplification of microwaves in a plasma

SOURCE: Przeglad elektroniki, no. 9, 1965, 417-430

TOPIC TAGS: plasma communication effect, ~~plasma control~~, electromagnetic radiation, ~~plasma generator~~, amplifier design, plasma device, plasma waveguide, radio signal, microwave, circuit design

ABSTRACT: On the basis of the most important studies published in the course of the last several years, the author reviews the problems associated with the generation and amplification of microwaves in a plasma. This review study was undertaken because new and as yet uninvestigated properties of plasma have indicated that with their aid it is possible to solve many new problems of science such as the origin of radio signals (noise signals) from interstellar space, and also the possibility of using the wave guide properties and resonance properties of plasma to design systems capable of generating and amplifying electromagnetic waves in the millimeter and sub-millimeter bands. Some

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ACC NR: AP6001433

structural designs for plasma amplifiers and frequency multipliers are given and also photos, circuit diagrams and sketches for orientation in the progressing investigation. The difficulties associated with the further development of plasma devices and the specifications which must be satisfied if plasma devices are to be successfully used in microwave technique are discussed. To obtain good amplification of around 10 dB, for a frequency of 300 gc, for example, a plasma more than 30% ionized must be obtained. To overcome these difficulties, which may follow in the next few years, the road is open for the development of new types of devices for the generation and amplification of electromagnetic waves. Orig. art. has: 30 figures and 2 formulas.

SUB CODE: 20,17,09/ SUBM DATE: 13Jan65/ ORIG REF: 001/ SOV REF: 002/ OTH REF: 014

Card 2/2

KOWALSKI, M.S.

Therapeutic use of vernix caseosa. Przegl. lek., Krakow 8 no.7:205-209 1952. (CIML 23:4)

1. Of the Obstetric-Gynecological Department (Head--Marian St. Kowalski, M. D.) of Sosnowiec Municipal Hospital No. 1.

KOWALSKI, Marian St.

KOWALSKI, Marian St.

Model of a knife for gynecological surgery. Przegl. lek. 10 no.3: 115-116 Mr. '54.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpitala Miejskiego No. 1 w Sosnowcu. Ordynator: Dr med. Marian S.Kowalski.
(GYNECOLOGY, apparatus and instruments,
*knife)

KOWALSKI, MARIAN, ST.

KOWALSKI, Marian St.

Modified of Guttmann's colposcope. Przegl. lek. 10 no.3:116 Mr '54.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpitala Miejskiego No. 1 w Sosnowcu. Ordynator: Dr med. Marian St.Kowalski.
(GYNECOLOGY, apparatus and instruments,
*colposcope, modified Guttmann's)

KOWALSKI, Marian St.

Subcutaneous emphysema as a complication of labor. Polski tygod. lek. 10 no.35:1152-1153 29 Aug 55.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpitala Miejskiego Nr 1 w Sosnowcu: ordynator Oddzialu: dr med. M.St. Kowalski. Sosnowiec, ul. Stalinogrodzka 30 m. 11.

(LABOR, complications
emphysema, subcutaneous)
(EMPHYSEMA, subcutaneous, in labor)

KOSZLA, Marian, KOWALSKI, M.

Treatment of postoperative hernias. Polski przegl. chir. 27 no.6: 567-576 Je '55.

1. Z Chirurgiczno-Urazowego Oddz. Miejsk. Szpit. Dziec. nr. 1 w Warszawie. Ordynator: doc. dr med. Z Ambros. Warszawa, ul. Wiejska 11 m. 5.

(SURGERY, OPERATIVE, complications, postop. hernia, surg.)
(HERNIA, postop. surg.)

KOWALSKI, M.

RADLINSKA, J.; KOWALSKI, M.

Cystic dilation of lower ureteral segment in children.
Postepy chir. 3:165-171 1956.

(URETERS, dis.
ureterocele in child, surg. (Pol))

KOWALSKI, M. ST.

EXCERPTA MEDICA Sec 7 Vol.12/7 Pediatrics July 58

1808. TREATMENT OF HAEMOLYTIC DISEASE OF THE NEWBORN - W sprawie leczenie hemolitycznej zółtaczki noworodków - Kowalski M. St. and Rewilak M. Odd. Położnictwa i Chor. Kobiecych Szpit. Miejskiego nr 1, Sosnowiec - PRZEGL. LEK. 1956, 12/10 (306-308)

In suspected cases the usual examinations of the blood are carried out, but as treatment partial blood transfusions are given without exsanguination, which is a simple method in all circumstances. These babies are controlled for 2 yr. after birth to observe their development, the function of several organs and of the blood.

Mikulowski - Cracow (VII, 4)

KOWALSKI, Marian St.; REWILAK, Mieczyslaw

Rare developmental defect in fetus. Gin. polska 28 no.2: 161-165 Mar-Apr 57.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpitala Miejskiego nr 1 w Sosnowcu Ordynator Oddzialu: dr. med. M. St. Kowalski. Adres: M. Kowalski, Sosnowice, Stalingradzka 30.

(ABNORMALITIES, etiology and pathogenesis, threatened abortion causing extensive abnorm. in stillborn (Pol))

(ABORTION, complications, threatened, causing multiple abnorm. in stillborn (Pol))

KOWALSKI, Marian St.

Case of polymastia. Pat.Polska 9 no.1:73-74 Jan-Mar '58.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpital Miejskiego nr 1 w Sosnowcu Ordynator: dr med. M. St. Kowalski. Adres: Sosnowiec Szpit. Miejski Nr 1.
(BREAST, abnorm.
polymastia in female, case report (Pol))

KOWALSKI, Marian; SLEBIODA, Krystyna

A focus of food poisoning caused by S. typhimurium. Przegl. epidem. 15 no.1:87-88 '61.

1. Z Oddzialu Zakaznego Szpitala Miejskiego im. Jonstona i z Miejskiej Stacji Sanitarno-Epidemiologicznej w Lesznie Wlkp. Dyrektor: dr med. M.Kowalski.
(SALMONELLA INFECTIONS epidemiol)

KOWALSKI, Marian S.

Analysis of cesarean sections performed in the City Hospital No. 1 in Sosnowiec. Ginek. pol. 34 no.1:117-128 '63.

1. Z Oddzialu Poloznictwa i Chorob Kobiecych Szpitala Miejskiego Nr 1 w Sosnowcu Ordynator Oddzialu: dr med. M.S. Kowalski.
(CESAREAN SECTION)

STAHNKSKI, Ryszard; KUJALSKI, Mieczysław

Effect of lysogenization on variability of phage type in Rhizobium meliloti. Acta microbiol. Pol. 14 no.3/4: 231-236 '65.

1. From the Department of General Microbiology, Maria Curie-Sklodowska University, Lublin. Submitted April 17, 1965.

KOWALSKI, MIECZYSLAW

~~FISCHER, E.A.~~,

35

PHASE I BOOK EXPLOITATION POL/5981

Symposium on Electroacoustic Transducers. Krynica, 1958

Proceedings of the Symposium on Electroacoustic Transducers [held in] Krynica, 17-26 September, 1958. Warsaw, Panstwowe Wydawnictwo Naukowe, 1961. 442 p. Errata slip inserted. 630 copies printed.

Sponsoring Agency: Polish Academy of Sciences. Institute of Basic Technical Problems.

Ed. in Chief: Janusz Kacprowski, Doctor of Sciences; Editing Committee: Ignacy Malecki, Professor, Doctor of Sciences; Wincenty Pajewski, Doctor; and Jerzy Wehr, Master of Sciences; Secretary: Juliusz Mierzejewski.

PURPOSE: This book is intended for physicists and acoustical engineers.

COVERAGE: The book is a collection of detailed research papers constituting the proceedings of a conference held in Krynica from 17 to 26 September 1958 under the auspices of the Institute of Technical Problems, Polish Academy of Sciences.

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Symposium on Electroacoustic Transducers POL/5981

The following basic problems are treated: 1) theoretical research on energy transformation processes; 2) experimental development of new types of transducers; 3) electroacoustic measurements; 4) technology of piezoelectric and magnetostrictive materials; 5) construction of transducers for technical needs; and 6) design of acoustical transducer systems. No personalities are mentioned. References (if any) follow the individual articles.

TABLE OF CONTENTS:

Card 2/8

Symposium on Electroactoustic Transducers POL/5981

AVAILABLE: Library of Congress

SUBJECT: Electric Power (Electronics)

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SK/dmp/gmp
7-5-62

KOWALSKI, Mieczyslaw, mgr inz.

Insititute of Organic Industry. Chemik 16 no.9:259-262 S '63.

BELLERT, Stanislaw; GODWOD, Jerzy; KOWALSKI, Mieczyslaw

Teleconference equipment. Rozpr elektrotech 8 no.2:317-335 '62.

1. Katedra Teletransmisji Przewodowej Politechnika, Warszawa.